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Redefining the Road for the Industry

Переопределение путей к индустрии практике

Key words: polygraph training, American Polygraph Association, polygraph industry

Abstract: The polygraph is an instrument that detects, monitors, and records physiological responses that are allegedly of psychological origin and attributed to deception. Hence the human mind and its complex psychology are the core of the detected physical responses. However, the polygraph industry has almost entirely overlooked psychological issues in its training and publishing. The industry focuses its attention and interest on various technical aspects of the test such as e.g. scoring, rather than concentrating on what is most important, i.e. the examinee's psychology, as it is responsible for almost the entire test result. The paper extensively explains the importance of examinee psychology and its influence on test outcome, points to the shortfalls in training and publication activity of the industry, and discusses the result and impact of the industry's approach.

The entire practice of detection of deception relies on the fundamental assumption that the body produces physical responses when a human is lying i.e. we assume that, being a result of a psychological process, the cognitive decision to lie commences a chain of physical responses. Although the body (physiology) and the mind (psychology) are

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two different and separate entities, our personal experience has taught us that they are associated with each other. We all have experienced situations where a psychological stimulus triggers physical changes in our body e.g. we tend to blush when embarrassed and go pale when scared; lying is not any different. The problem is that the physical changes we experience when lying, e.g. an increase in heart rate and blood pressure are *not exclusive to lying* and are also triggered by other reasons including fear. So far scientists have found no physical response exclusive to lying, unless you count Pinocchio's nose. Naturally, the fact that lying lacks exclusive physical responses raises the question of how we know that the physical responses detected, monitored, and recorded by the polygraph can be attributed to lying and not to any other thought that crossed the examinee's mind while answering or to a disturbing emotion related to the question. The solution lies in the questioning techniques that can determine, with a high statistical probability, that the physical responses monitored and recorded by the polygraph during the test can be attributed to lying. In other words, it can be said that all the polygraph testing methods designed are sophisticated attempts to allow a high probability of correct distinction between truth-tellers and deceivers, despite the absence of a unique physiological sign of lying.

As a polygraph test involves psychophysiological measures, it is mandatory that the subject be physically fit and mentally focused at the time of the examination, for fear that cognitive dispersion and physical discomfort could affect and disrupt the parameters monitored by the polygraph, which may cause difficulty in interpreting the responses, and sometimes distorting the findings.

Although lying per se lacks unique and exclusive deception responses, experience has shown that there are many physical ones that the human body displays upon attempts to deceive. It is assumed that the emotions related to deception are the trigger that commences them. Emotions are people's subjective reactions to stimuli. Reactions carry a certain cognitive awareness, which is supposedly followed by changes of psychophysiological nature, and of verbal and nonverbal behaviour. Although fear of detection and its consequences are considered *the* main emotive contributor to the psychophysiological chain of responses detected by the polygraph, there are several other plausible emotion-related theories that explain the responses.

Whatever the causes of psychophysiological responses, there is no doubt that their source *lies in the psyche*. Nonetheless, the polygraph industry training and publications invest far too little interest in psychological issues as compared to such technical aspects as chart analysis and scoring, question formats.

The significance of psychological issues vs data analysis

Psychological issues

Examinees are instructed to give only "yes" and "no" answers in the test, but does such an answer represent a pure and clear denial or affirmation? Can the question not trigger, at least in some instances, a broader and/or more general association that may potentially contaminate the answer, which in return may produce false results?

One of the contributors to erratic and unclear charts, as well as to false results, are various contaminating factors of psychological nature. The effect of these contaminators was already acknowledged in the early days of polygraph. Trovillo (1938) pointed out that "a suspect may give a large response (...) not because he is guilty of robbing (...) but because he has robbed other (...) places." [1] Later Backster labelled the phenomenon as the *outside-issue factor*, which in some instances bears a "Damping (or Super Damping) effect that may suppress the examinee's reactivity to the relevant (in the case of a guilty examinee) or comparison (in the case of a truthful examinee) questions" [2], resulting in an inconclusive chart. Reid (1977) listed the following factors that may affect test results: lack of concern about the possibility of detection, extreme emotional tension or nervousness, over-anxiety to pass the test, anger, guilty feelings, involvement in other similar acts or offences, physical discomfort during the test, excessive interrogation prior to test, excessive number of test questions, prior test, adrenal exhaustion, rationalisation, and self-deceit [3].

For this reason alone, albeit other psychological factors and considerations also come into play, it is essential that each and every polygraph examiner receives an extended training and teaching in *all* the various psychological aspects of polygraph examination. No issue should be left out, and every aspect is as important as the other regardless of its significance. After all, some define a polygraph test as a particular psychological test, and they are right to do so. An in-depth instruction in psychological issues (best: extended and reiterated) will let the examiner have a better understanding of the examinee's state of mind during the test, resulting in improved phrasing of the questions and an approach that will eventually lead to more accurate results.

Chart (data) analysis and scoring

Although there is no doubt that a proper chart (data) analysis and scoring of the examinee's physical responses is an essential aspect of the test, it should be kept in mind that the physical responses represented in polygraph charts are but a function of the examinee's psychological state of mind while answering the test questions. The analysed responses are a products of various inputs including a proper pretest, well-constructed

relevant and especially comparison questions, the examiner's approach, and the testing proper. Computer programmers have a precise and realistic description of the real value of the analysed data stream, they often remark that data streams are highly GIGO prone; the acronym standing for Garbage In Garbage Out [4]. This is to say that the output can only be as accurate as the input and faulty input will not produce a correct output. Therefore outstanding proficiency, knowledge, and expertise in chart analysis and scoring is useless if the test is not conducted properly, because its contamination at input distorts the output.

Overlooking psychological issues, and focusing on chart analysis and scoring will produce reliable and expert chart analysts and decoders *of invalid tests*. The bottom line is that polygraphy will be labelled as having a very high *reliability* rate but a very low *validity*; not a very positive perspective to say the least.

The industry's interest

The industry's current stance on each of these issues (psychology and scoring) can be deduced from the time dedicated to them in training, publishing space, and presentations in our annual seminars.

Training
The APA Board of Directors approved the following accreditation standards, effective since January 2015:
"The education and training program shall provide the minimum number of hours of classroom education and training in the following subjects and disciplines (...) Psychology (20 hours): The student will be able to explain the basic elements of human psychology and their applicability to the science of polygraph testing (...) Test Data Analysis (40 hours): The student will demonstrate a working knowledge of the physiological response patterns used in interpretation of polygraph data, in addition to an ability to identify data suitable and not suitable for analysis. Students will learn to analyze polygraph data using a validated scoring system, including the appropriate use of decision rules." [5]

Thus only *6.25%*of the 320 hours of basic polygraph examiner training (+80 hours of practice) is dedicated to issues of psychological nature while *12.5%* is dedicated to chart analysis. In other words, chart analysis is twice as important as psychology according to the APA BOD.

Is it really so ...?

Things are not getting any better... The APA Continuing Education Policy's only requirement is that "practicing examiners shall complete a minimum of 30 continuing education hours every two years in course work related to the field of polygraphy" [6]. This gives schools liberty to include any subject of their choice, going even to the worst extreme, advertised by one of accredited schools: "Advanced Polygraph Examiner's course is uniquely designed *where the students determine the curriculum*[emphasis by T. Amsel]. This course is designed to improve the ability of an examiner by expanding their knowledge on validated techniques and best practices."

Out of 67 different presentations at the 2016 and 2017 APA Annual Seminar and Workshop (participation in the event is recognised as continuing education) *only* four were dedicated to psychological issues, which accounts for approx. 6% – similar to the share of time dedicated in the basic training.

Publications

The *Journal of the American Polygraph Association* is an official APA publication with research reports, book reviews, legal issues, and the like. A digest of issues from the last five years (2012–17) revealed that only 4 of 88 articles (i.e. 4.5%) were dedicated to psychological aspects of polygraphy, while 16 (18.2%) were dedicated to various scoring methods.

Practical conclusion: use of diagnostic instruments

Polygraph

Although it is *required* to have an extensive training in psychology, and to include psychological issues in general and specific test-related issues in particular, the industry fails to concentrate on the issue that is most important in polygraphy, namely the human mind, but instead chooses to focus on technical issues. As a result, graduates of basic polygraph examiner training are no more than instrument operators with some knowledge of conducting tests and analysing the responses. They are *technicians* rather than qualified examiners with broad knowledge and extensive psychological education, even though the requirements in this profession are at least similar to what is expected from operators of medical instruments. Currently the industry produces mediocre technicians, some of whom become with time experienced technicians, yet only thanks to supervision and constant quality control, and even among this group ones who reach the required high level of expertise are very few.

Medicine

Following a patient's complaint, medical doctors use an array of diagnostic tools to analyse its source. They include various medical diagnostic instruments such asX-ray, CT, and MRI. Initially, administration of a test with one of these involved a medical doctor who determines the type of device and test to be used in the specific case: a situation similar to the polygraph test phase, where, having received the case data, the examiner determines test technique, format, and questions. A medical technician who operates the device works along the same line as a polygraph examiner. Finally, a diagnostician (MD) who analyses the test results is like the polygraph examiner analysing the curves recorded on the charts.

Unlike in the case of tests using medical equipment, where three different professionals from two different disciplines and two sub-specialisations are involved, the polygraph examiner covers the whole process. A question arises here whether the examiner has received satisfactory training to do the task successfully? The answer is that the training is far from that. Medical doctors study for seven years and go through a prolonged specialisation internship. The average requirements for technicians learning to operate medical equipment include two full time academic years plus approximately six month of internship. What about polygraph examiners? Examiners, who analyse the case, set the questions, operate the instrument, and analyse the results learn all of it in a 10-week training without any internship.

In addition to the unsatisfactory training, for financial considerations, students with insufficient background education and inappropriate professional adaptability complete basic training and immediately start their business, turning their examinees into laboratory rats.

Epilogue

Next time when you wonder why polygraphy and polygraph examiners are under appreciated, looked down upon by legalists, psychologists and academics, and suffer from such a bad reputation just reread this article.

In order to increase the level of professionalism among the examiners, industry leaders should re-evaluate candidate selection standards and the training syllabus. Candidate requirements should include minimal age, personal traits incl. good interpersonal communicative abilities, and an experience in interviewing should be considered an advantage. The training should be performed at a graduate degree level, with emphasis on psychology and include a final thesis based on research.

Following the graduation, the graduate should practice for at least a nine months (internship period) with a set minimal number of tests. In their later professional life, practitioners should attend continuing education seminars at least annually.

Only after recalculating our current route, do we as the industry stand a chance to ascend to a higher stage of professionalism.

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